

## **REMARKS**

### **Overview**

Claims 1-16, 19-27, and 29-32 are pending in this application. Claims 23, 25-27 and 29 have been allowed. Claim 22 has been recognized as containing allowable subject matter but is objected to as depending from a rejected claim. Claims 1-16, 19-21, 24 and 30-32 have been rejected. This response addresses each of the Examiner's remaining concerns with the application, and places the remaining claims in proper form for immediate allowance. Applicant therefore respectfully requests reconsideration and passage to issuance.

### **Additional Claim Amendments**

Claims 2, 21, and 24 have been amended to provide a more definite explanation of the claimed subject matter. Claims 1, 6, 19, and 30 have been amended to more clearly recite what is meant by a "flux balance analysis model", thereby further differentiating the current invention from that disclosed by prior art.

### **Issues under 35 U.S.C. § 112**

Claims 2, 21, and 24 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. In particular, the Examiner states that it is unclear whether claims 2 and 21 are intended to be an additional method step or a limitation of the constraints themselves. The Examiner also states that there is insufficient antecedent basis for the limitation in claim 24.

Claims 2 and 21 are intended to provide for an additional limitation to those defined constraints found in the parent claims. The Applicant has amended these claims to clarify the scope. Therefore, it is respectfully submitted that these issues have been properly remedied, and these rejections should be withdrawn.

Claim 24 has been amended to remedy the insufficient antecedent basis issue. Claim 24 provides further definition to the constraints of claim 23. Therefore, it is respectfully submitted that this issue has also been properly remedied.

### **Issues under 35 U.S.C. § 102**

Claims 1-8, 10-12, 14-15, 19-21, and 30-31 have been finally rejected under 35 U.S.C. § 102(b) as being anticipated by HATZIMANIKATIS et al. (AIChE Journal (May 1006) Vol. 42, no. 5, pp. 1277-1229). Applicant has previously distinguished the HATZIMANKATIS et al. reference in the response of December 13, 2005, however, the Examiner has noted, the basis for these differences included limitations not found in the claims (Office Action, p. 3-4). It is believed that the Examiner understands the significant differences between Applicant's invention and the prior art, however, the Examiner interprets the terminology of "a flux balance analysis model" more broadly than Applicant intended. Therefore, the independent Claims 1, 6, 19, and 30 have been amended to provide a more precise definition of what a flux balance analysis model is. The amendment clarifies that Applicant's flux balance analysis models utilize "stoichiometric mass balances of the metabolic and cellular composition information to identify boundaries for available flux distributions." The amended claim language provides further definition to the flux balance analysis model by incorporating the definition provided in the specification, p. 1, paragraph 5. This language effectively differentiates the current flux balance analysis models

from the metabolic kinetic modeling methods the Examiner has identified in HATZIMANIKATIS. Although the HATZIMANIKATIS model is a constraint-based metabolic network that includes mass balances for metabolites, the Examiner maintains that the model itself, which represents fluxes of reactions and comprises mass balance information, is a flux balance analysis. However, HATZIMANIKATIS is clearly differentiated from Applicant's invention as HATZIMANIKATIS does not disclose "utilizing stoichiometric mass balances of the metabolic and cellular composition information to identify boundaries for available flux distributions." Therefore, these rejections to claims 1, 6, 19, and 30 must be withdrawn and the Examiner should find these claims allowable. As claims 2-5, 7-8, 10-12, 14-15, 20-21, and 31 depend from these amended claims, these claims are also allowable.

#### **Issues under 35 U.S.C. § 103**

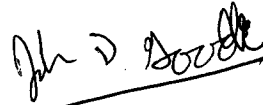
Claims 13, 16, and 32 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over HATZIMANIKATIS as applied to Claims 1-8, 10-12, 14-15, 19-21, and 30-31. In light of the amendment to independent claims 6 and 30, it is submitted that due to their dependencies, claims 13, 16, and 32 should also be allowed.

#### **Conclusion**

It is respectfully submitted that all pending claims are in proper form for immediate allowance. Reconsideration and passage to issuance are therefore respectfully requested. The Examiner is invited to telephone the underlying attorney in order to reach mutual agreement as to claim limitation, should this amendment not place all claims in proper form for immediate allowance.

Please consider this a one-month extension of time from June 28, 2006 to July 28, 2006 and charge Deposit Account No. 26-0084 the amount of 60.00 for this extension. No other fees or extensions of time are believed to be due in connection with this amendment; however, consider this a request for any extension inadvertently omitted, and charge any additional fees to Deposit Account No. 26-0084.

Respectfully submitted,



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